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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/668,574

09/23/2003

Mayuko Okada

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EXAMINER

SHOSHO, CALLIE E

ART UNIT

PAPER NUMBER

1714

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DELIVERY MODE

08/07/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/668,574	Applicant(s) OKADA ET AL.	
	Examiner Callie E. Shosho	Art Unit 1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-8 and 10-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-8 and 10-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. In the Advisory Action mailed 7/11/07, claims 1-2 and 4-6 were allowed while claims 7-8 and 10-12 were rejected.

In response, in the after-final amendment filed 7/23/07, applicants' cancelled claims 7-8 and 10-12.

However, the indicated allowability of claims 1-2 and 4-6 is withdrawn in view of the newly discovered reference(s) to Johansen et al. (U.S. 7,063,970) as well as the reconsideration of Fujioka et al. (U.S. 5,667,569). Rejections based on these reference(s) follow.

Given that applicants' cancelled claims 7-8 and 10-12 in response to the examiner's indication of the allowability of claims 1-2 and 4-6 and in order to give applicants' opportunity to respond to the new grounds of rejection set forth below with respect to claims 1-2 and 4-6, the after-final amendment filed 7/23/07 has not been entered and the finality of the office action mailed 3/23/07 has been withdrawn. Thus, the following action is non-final.

It is noted that for completeness, the rejection of record utilizing Kato (U.S. 6,440,203) with respect to claims 7-8 and 10-12 has been re-stated below as well as applicants' arguments with respect to Kato as set forth in the amendment filed 6/22/07 and examiner's response to such arguments as set forth in the office action mailed 7/11/07.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 recites “self-dispersing type carbon black”. The scope of the claim is confusing because it is not clear what is meant by “type” or what carbon blacks are encompassed by this phrase. The addition of the word “type” extends the scope of the claims so as to render them indefinite since it is unclear what “type” is intended to convey. The addition of the word “type” to the otherwise definite expression renders the definite expression indefinite by extending its scope. *Ex parte Copenhaver*, 109 USPQ 118 (Bd. App. 1955).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1 and 4-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Johansen et al. (U.S. 7,063,970).

Johansen et al. disclose water-based paint composition comprising water, pigment, 5-40% acrylic resin, i.e. binder, and 2-10% solvent that is tripropylene glycol n-butyl ether. It is

Art Unit: 1714

calculated that the ratio of tripropylene glycol n-butyl ether to acrylic resin is 0.05 (2/40) to 2 (10/5) (col.7, lines 23-33, col.8, lines 8-10 and 15-23).

While there is no disclosure that the composition is “an ink for ink-jet recording” as presently claimed, applicants attention is drawn to MPEP 2111.02 which states that “if the body of a claim fully and intrinsically sets forth all the limitations of the claimed invention, and the preamble merely states, for example, the purpose or intended use of the invention, rather than any distinct definition of any of the claimed invention’s limitations, then the preamble is not considered a limitation and is of no significance to claim construction”. Further, MPEP 2111.02 states that statements in the preamble reciting the purpose or intended use of the claimed invention must be evaluated to determine whether the purpose or intended use results in a structural difference between the claimed invention and the prior art. Only if such structural difference exists, does the recitation serve to limit the claim. If the prior art structure is capable of performing the intended use, then it meets the claim.

It is the examiner’s position that the preamble does not state any distinct definition of any of the claimed invention’s limitations and further that the purpose or intended use, i.e. ink for ink jet recording, recited in the present claims does not result in a structural difference between the presently claimed invention and the prior art composition and further that the prior art structure which is a composition identical to that set forth in the present claims is capable of performing the recited purpose or intended use.

In light of the above, it is clear that Johansen et al. anticipate the present claims.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johansen et al. (U.S. 7,063,970) in view of Belmont et al. (U.S. 5,851,280).

The disclosure with respect to Johansen et al. in paragraph 5 above is incorporated here by reference.

The difference between Johansen et al. and the present claimed invention is the requirement in the claim of specific pigment.

Belmont et al. disclose the use of modified carbon black wherein the carbon black has ionic group such as carboxylic acid or sulfonic acid on its surface, i.e. self-dispersing carbon black. It is disclosed that the pigment has increased water-dispersability as compared to untreated carbon black and that the pigment is suitable for use in inks and paints (col.1, lines 11-16, col.7, lines 15-40, col.8, lines 9-20, and col.10, lines 36-38).

In light of the motivation for using specific pigment, i.e. self-dispersing carbon black, disclosed by Belmont et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to utilize such pigment in Johansen et al. in order that the pigment have excellent dispersability without the use of dispersant, and thereby arrive at the claimed invention.

9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johansen et al. (U.S. 7,063,970) in view of JP 08300886.

The disclosure with respect to Johansen et al. in paragraph 5 above is incorporated here by reference.

The difference between Johansen et al. and the present claimed invention is the requirement in the claim of ink cartridge.

Pending formal translation, it is noted that JP 08300886 discloses device containing cartridge that holds paint or ink so that the paint or ink is coated onto recording medium.

In light of the above, it therefore would have been obvious to one of ordinary skill in the art to utilize composition of Johansen et al. in device that contains cartridge that holds paint or ink composition so that the composition is coated onto recording medium, and thereby arrive at the claimed invention.

10. Claims 1, 4, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujioka (U.S. 5,667,569).

Attention is drawn to example 5 of Fujioka that disclose ink jet ink comprising 10% carbon black, 7% styrene-maleic acid copolymer, 5% tripropylene glycol butyl ether, and 53% water. It is calculated that the ratio of tripropylene glycol n-butyl ether to styrene-maleic acid is 0.71. Although there is no explicit disclosure of ink cartridge comprising the ink, Fujioka discloses that the ink is printed onto substrate from ink jet printer which would intrinsically possess ink cartridge to store the ink.

The difference between Fujioka and the present claimed invention is the requirement of the claim of acrylic resin.

Attention is drawn to col.3, lines 15-16 of Fujioka that disclose the use of dispersant that is acrylic resin as well as the equivalence and interchangeability of using such acrylic resin with using styrene-maleic acid copolymer (col.3, line 18).

In light of the disclosure in Fujioka of the equivalence and interchangeability of using acrylic resin dispersant with using styrene-maleic acid copolymer dispersant, it therefore would have been obvious to one of ordinary skill in the art to utilize acrylic resin in the ink of example 5 of Fujioka, and thereby arrive at the claimed invention.

11. Claims 7-8 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (U.S. 6,440,203).

Kato discloses ink jet ink comprising water, 0.1-10% self-dispersing carbon black, acrylic resin which is a dispersant for a second colorant present in the ink, and 1-20% solvent such as dipropylene glycol mono-n-propyl ether. Given that the ratio of self-dispersing carbon black to second colorant is 1:3 to 7:1, given that the amount of self-dispersing pigment and second colorant is not more than 20%, and given that the acrylic resin is present in amount of 5-150% of second colorant, it is calculated that the acrylic resin is present in amount of 0.75 (0.05×15)-22.5% (1.5×15). Thus, the ratio of dipropylene glycol mono-n-propyl ether to acrylic resin is therefore calculated as 0.04 ($1/22.5$) to 20 ($15/0.75$) (col.1, lines 9-10, col.2, lines 33-35 and 40-41, col.3, lines 55-58, col.4, lines 43-48, col.5, line 3, col.7, lines 42-46, col.8, lines 2-3 and 6-8, and col.14, lines 3-9). Although there is no explicit disclosure of ink cartridge containing the ink, Kato discloses that the ink is printed onto substrate from ink jet printer that would intrinsically possess ink cartridge to store the ink.

It is noted that the present claims require ratio of dipropylene glycol mono-n-propyl ether to acrylic resin of 0.5-2 while Kato discloses ratio of 0.04-20 and present claims require amount of 0.5-5% dipropylene glycol mono-n-propyl ether and 0.1-5% acrylic polymer while Kato discloses 1-20% dipropylene glycol mono-n-propyl ether and 0.75-22.5% acrylic resin.

As set forth in MPEP 2144.05, in the case where the claimed range "overlap or lie inside ranges disclosed by the prior art", a *prima facie* case of obviousness exists, *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). Further, Kato discloses the use of 1-20% dipropylene glycol mono-n-propyl ether as

penetrating agent and disclose the use of 0.75-22.5% acrylic polymer as dispersant. It therefore would have been within the skill level of one of ordinary skill in the art to choose amounts of dipropylene glycol mono-n-propyl ether and acrylic polymer including those that result in ratio as presently claimed in order to produce ink with effective penetration into substrate and good dispersion stability.

In light of the above, it therefore would have been obvious to one of ordinary skill in the art to use dipropylene glycol mono-n-propyl ether and acrylic resin in Kato in amounts and ratio, including that presently claimed, in order to produce ink with effective penetration into substrate and good dispersion stability, and thereby arrive at the claimed invention.

Response to Arguments

12. With respect to Fujioka, applicants' previously argued (see amendment filed 1/13/06) that Fujioka et al. was not a proper anticipatory reference against the present claims.

It is agreed that Fujioka is not a proper reference against the present claims under 35 USC 102. However, it is the examiner's position that Fujioka is a proper reference against the present claims under 35 USC 103 for the reasons set forth in paragraph 10 above.

It is noted that there is comparative data set forth in the present specification. The data compares ink within the scope of the present claims, i.e. comprising acrylic polymer and tripropylene glycol n-butyl ether or acrylic polymer and dipropylene glycol n-propyl ether, with ink outside the scope of the present claims, i.e. comprising no acrylic polymer and tripropylene glycol n-butyl ether (comparative example 1), comprising acrylic polymer and no glycol ethers (comparative example 2), comprising acrylic polymer and tripropylene glycol methyl ether

(comparative example 3), comprising acrylic polymer and diethylene glycol diethyl ether (comparative example 4), comprising acrylic polymer and triethylene glycol diethyl ether (comparative example 5), and comprising triethylene glycol dimethyl ether and salt of copolymer of acrylic acid/sulfonic acid monomer (comparative example 6). It is shown that the inks of the present invention are superior in terms of recovery performance, straight travel stability, fixation, and/or drying.

With respect to Fujioka, it is the examiner's position that the data is not persuasive given that there is no comparison between ink of the present invention and the ink of Fujioka. Firstly, with respect to comparative examples 2-6, it is noted that as set forth in example 5, Fujioka already recognizes the criticality of using tripropylene glycol butyl ether. Secondly, with respect to comparative example 1 which discloses ink comprising no acrylic polymer and tripropylene glycol n-butyl ether, it is noted that not only is the example outside the scope of the present claims but it is also outside the scope of Fujioka which always requires the use of binder resin.

With respect to Kato, applicants argue that Kato is not a relevant reference against present claims 7-8 and 10-12 given that Kato disclose very broad blending ratio of dipropylene glycol normal propyl ether to acrylic resin, i.e. 0.044 to infinity, as compared to the presently claimed narrow range and disclose broad range of amount of dipropylene glycol normal propyl ether as compared to the presently claimed narrow range and thus Kato does not disclose the presently blending ratio or amount of dipropylene glycol normal propyl ether with sufficient specificity. Applicants also argue that there is no motivation in Kato to utilize presently claimed

blending ratio of dipropylene glycol normal propyl ether to acrylic polymer especially in light of the unexpected results set forth in the present specification.

It is noted that the examiner's position remains that the upper limit of the blending ratio of dipropylene glycol normal propyl ether to acrylic polymer in Kato is not infinity. It is noted that the ink of Kato requires the use of 0.1-10% first colorant. From col.3, lines 52-58, it is clear that the use of the first color is mandatory in the ink. In light of this, given the disclosure in col.4, lines 43-48 of Kato et al. that in a preferred embodiment the ink contains first colorant and second colorant, i.e. pigment, such that the weight ratio of the first colorant to the pigment in the second colorant is 1/3 to 7/1, it is clear that there is necessarily present some amount of first colorant and second colorant. While col.4, lines 49-53 of Kato discloses that the total amount of first colorant and pigment contained in the second colorant is not more than 20%, such disclosure must be read in light of the reference as a whole. In light of the other disclosures of Kato that colorant is necessarily present in the ink, it is clear that the lower limit of the amount of first colorant and pigment contained in the second colorant is not zero.

Given that the range of the total amount of the first colorant and the pigment contained in the second colorant is no more than 20% or no more than 15% and given that the ratio of first colorant to the pigment contained in the second colorant is 1/3 to 7/1, it is calculated that there is present no more than 15% pigment ($20 \times 3/4$). Further, given that the lower limit of the total amount of first colorant and pigment comprised in the second colorant is necessarily greater than zero (as discussed in the preceding paragraph) and given that the acrylic polymer is present in amount of 5-150% based on the amount of pigment, it is calculated that the acrylic polymer is present in amount of 0.75 (0.05×15) - 22.5% (1.5×15). In light of this, it is calculated that the

ratio of dipropylene glycol normal propyl ether, which is present in the ink of Kato in amount of 1-20% or 2-15%, to acrylic polymer is 0.04 (1/22.5) to 20 (15/0.75).

Applicants point to MPEP 2131.03 (II) as well as the unexpected data set forth in Table 12 of the present specification. Applicants argue that the data shows that the combination of dipropylene glycol normal propyl ether and acrylic polymer is excellent in straight travel stability, recovery performance, fixative performance, and drying performance.

It is noted that the data compares ink within the scope of the present claims, i.e. comprising acrylic polymer and dipropylene glycol mono-n-propyl ether, with ink outside the scope of the present claims, i.e. comprising no acrylic polymer and dipropylene glycol mono-n-propyl ether, comprising acrylic polymer and no dipropylene glycol mono-n-propyl ether, comprising acrylic polymer and tripropylene glycol methyl ether, comprising acrylic polymer and diethylene glycol diethyl ether, comprising acrylic polymer and triethylene glycol diethyl ether, and comprising triethylene glycol dimethyl ether and salt of copolymer of acrylic acid/sulfonic acid monomer. It is shown that the inks of the present invention are superior in terms of recovery performance, straight travel stability, fixation, and/or drying.

However, there is no evidence of unexpected or surprising results regarding the amount of dipropylene glycol mono-n-propyl ether or the ratio of no dipropylene glycol mono-n-propyl ether to acrylic polymer. That is, while the comparative data set forth in the present specification establishes the criticality of using dipropylene glycol n-propyl ether and acrylic polymer, Kato already discloses the use of dipropylene glycol mono-n-propyl ether and acrylic polymer. There is no data, however, that establishes criticality regarding the amount of dipropylene glycol mono-n-propyl ether or ratio of dipropylene glycol n-propyl ether to acrylic polymer.

Applicants argue that the data in Table 12 supports the assertion of unexpected results in light of examples 4 and 5 which utilize dipropylene glycol n-propyl ether and acrylic polymer in claimed ratio and in light of the disclosure in the present specification which sets forth what happens outside the presently claimed ratio of dipropylene glycol n-propyl ether to acrylic polymer.

However, while the present specification discloses the preferred amount of dipropylene glycol n-propyl ether utilized and discloses the ratio of dipropylene glycol n-propyl ether to acrylic polymer, there is no evidence, i.e. data, to support applicants' position regarding what happens outside the amount of dipropylene glycol n-propyl ether or the ratio of dipropylene glycol n-propyl ether to acrylic polymer.

In response to the examiner's position that the data does not establish criticality of the ratio of dipropylene glycol n-propyl ether to acrylic polymer, applicants argue that the data does provide proper comparison of ink within the scope of the present claims, i.e. comprising ratio of dipropylene glycol n-propyl ether to acrylic polymer as presently claimed (examples 4-5), with ink outside the scope of the present claims but within the scope of Kato, i.e. ratio of dipropylene glycol n-propyl ether to acrylic polymer is infinity (comparative example 1).

However, as set forth above, given the examiner's position that upper limit of the ratio of dipropylene glycol n-propyl ether to acrylic polymer is not infinity, it is the examiner's position that such data is not persuasive given that the data is not commensurate in scope with the scope of Kato.

Similarly, applicants argue that with respect to the amount of dipropylene glycol n-propyl ether required in present claim 10, the data in Table 12 establishes unexpected or surprising results over Kato.

However, it is the examiner's position that the data is not commensurate in scope with Kato given that there is no comparison between ink within the scope of the present claims, i.e. comprising 0.5-5% dipropylene glycol n-propyl ether, with ink outside the scope of the present claims but within the scope of Kato, i.e. comprising amount within the range disclosed by Kato, i.e. 1-20% or 2-15%, but outside that presently claimed.

Applicants also argue that in order for a *prima facie* case of obviousness to exist, the prior art must disclose a ratio. Given that Kato do not explicitly disclose ratio of dipropylene glycol mono-n-propyl ether to acrylic polymer but only indirectly implicitly discloses ratio of dipropylene glycol mono-n-propyl ether to acrylic polymer, the disclosure of Kato is inadequate to provide a proper *prima facie* case of obviousness.

However, as set forth in MPEP 2144.05, in the case where the claimed range "overlap or lie inside ranges disclosed by the prior art", a *prima facie* case of obviousness exists, *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). Further, Kato discloses the use of 1-20% or 2-15% dipropylene glycol mono-n-propyl ether as penetrating agent and disclose the use of 0.75-22.5% acrylic polymer as dispersant. It therefore would have been within the skill level of one of ordinary skill in the art to choose amounts of dipropylene glycol mono-n-propyl ether and acrylic polymer including those that result in blending ratio as presently claimed in order to produce ink with

effective penetration into substrate and good dispersion stability. That is, while Kato does not explicitly disclose ratio of dipropylene glycol mono-n-propyl ether to acrylic polymer, it is the examiner's position that a *prima facie* case of obviousness has been established with respect to Kato given that, as described above, such ratio of dipropylene glycol mono-n-propyl ether to acrylic polymer can be calculated.

Applicants also argue that Kato is not a relevant reference against the present claims given that there is no disclosure in Kato of any effect on straight line travel stability or recording head discharge stability by adding dipropylene glycol mono-n-propyl ether to an ink containing an acrylic polymer or any disclosure of interaction between the dipropylene glycol mono-n-propyl ether and the acrylic polymer.

While it is agreed that Kato does not disclose any interaction between dipropylene glycol mono-n-propyl ether and acrylic polymer, the fact remains that Kato discloses ratio of dipropylene glycol mono-n-propyl ether to acrylic polymer that overlaps that presently claimed. Given that Kato discloses the use of 1-20% or 2-15% dipropylene glycol mono-n-propyl ether as penetrating agent and disclose the use of 0.75-22.5% acrylic polymer as dispersant, it would have been within the skill level of one of ordinary skill in the art to choose amounts of dipropylene glycol mono-n-propyl ether and acrylic polymer including those that result in blending ratio as presently claimed in order to produce ink with effective penetration into substrate and good dispersion stability.

Therefore, it is the examiner's position that it would have been obvious to one of ordinary skill in the art to use dipropylene glycol mono-n-propyl ether and acrylic polymer in Kato in

amounts and ratio, including that presently claimed, in order to produce ink with effective penetration into substrate and good dispersion stability, and thereby arrive at the claimed invention.

Although there is no disclosure in Kato that the dipropylene glycol mono-n-propyl ether is utilized to effect straight line travel stability or recording head discharge stability or that the acrylic polymer is utilized to improve recovery performance and fixation performance, given that Kato discloses amount of dipropylene glycol mono-n-propyl ether and ratio of dipropylene glycol mono-n-propyl ether to acrylic polymer that overlaps that presently claimed, and given that it would have been obvious to one of ordinary skill in the art to chose amounts and ratio as presently claimed, it is clear that the ink of Kato would therefore intrinsically possess good straight line travel stability and recording head discharge stability as well as improved recovery performance and fixation performance, and thereby arrive at the claimed invention.

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Schlarb et al. (U.S. 2003/0078338), similar to Johansen et al., disclose paint comprising 4-30% binder that is acrylic resin and 0.1-20%, based on amount of binder, tripropylene glycol monobutyl ether.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

Art Unit: 1714

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Callie E. Shosho
Primary Examiner
Art Unit 1714

CS
8/2/07